


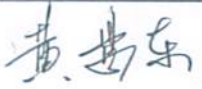

SPECIFICATION FOR APPROVAL

Customer : **RCS Components LTD**
 Product name : **AC ADAPTER (电源适配器)**
 Customer Model No. :
 Customer Part No. :
 Supplier Model No. : **FAP030-120S250E2**
 Supplier Part No. :

CUSTOMER APPROVED SIGNATURE

Approved by:	Checked by:	Tested by:
Explain: Please return to us "SPECIFICATION FOR APPROVAL" with your approved signatures. (承认书确认后请回签一份)		

Supplier approval signature:

Prepared by:	Checked by:	Approved by:
 鲁洪明 2010.11.25	 黄岳东 2010.11.25	 2010.11.25



深圳市福瑞祥电器有限公司恒丰分厂
SHENZHEN FEREX ELECTRICAL CO., LTD.

地址: 中国广东省深圳市宝安区西乡街道恒丰工业城 B7 栋 4-6 楼

Address: 4-6F, B7 Building, Hengfeng industrial park, Huangtian village, Xixiang town, Bao'an district, Shenzhen, Guangdong, China.

Tel: (0755) 27474030 27474044, 27474067, 27474073

Fax: (0755)27474076

E-mail: hjliu@ferex.com.cn

Website: <https://www.ferex.com.cn>

Table of contents

No.	Content	Page
0.	Revision control list	2
1.	Scope	3
2.	Input characteristics	3
3.	Output characteristics	3
4.	Energy Efficiency	3
5.	Protection characteristics	4
6.	Safety & EMC Standard	4
7.	Reliability & Quality control	4
8.	Environmental requirement	5
9.	Other requirements	5
10.	Mechanical characteristics:	5
11.	Certificate:	5
	APPENDIX A: Physical Dimensions	6
	APPENDIX B: Nameplate	7
	APPENDIX C: Packing	8
	APPENDIX D: Certificate	9

0. Revision control list:

Date	Description of Change	Revised by	Checked by	Approved by
2010-11-23	First release	H.M.Lu		

PRED. by	H.M.Lu2010-11-23	 福瑞祥 F E R E X	SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by			Model: FAP030-120S250E2	Rev.:1.0
APVD. by				

1. Scope:

This specification defines the input, output, performance characteristics, and environment, noise and safety requirements for a **30.0** watts output switching type power adapter. The adapter input/output are **100-240VAC** input and **+12.0V DC** with **2.5 A** Normal output current.

2. Input characteristics:

Test item	Min.	Normal	Max.
AC input voltage	90 V	100-240 V	264 V
AC input frequency	47 Hz	50/60 Hz	63 Hz
AC input current	0.7A Max. @ 100-240Vac input		
Inrush current (cold)	No damage shall occur and the input fuse shall not blow up.		

3. Output characteristics:

Test item	Output	Test condition
Rated output voltage	+ 12.0 V	100-240 Vac input
Output voltage range	11.4V-12.6V	2.5A output current & 100-240 Vac input
Min. output current	0 A	100-240 Vac input
Normal output current	2.5 A	100-240 Vac input
Ripple	120mV Max.	2.5A output current & 230 Vac input
		* measured at the end of output cables which added a 0.1uF(104)ceramic capacitor and a 47uF electrolytic capacitor(connect parallel), measured with a 20MHz bandwidth.
Turn-on Delay Time	3.5S Max.	2.5A output current & 100-240 Vac input
Rise Time	20mS Max.	2.5A output current & 100-240 Vac input
Overshoot	5% Max.	2.5A output current & 100-240 Vac input
Remark: Unless otherwise specification output load must set at CC mode.		

4. Energy Efficiency

Item	Requirement	
No-load power consumption	0.3W Max.	100-240 Vac input & No-load
Efficiency	<input checked="" type="checkbox"/> 80 % Min.	2.5A output current & 230 Vac input
	<input checked="" type="checkbox"/> 83.7% Min. For average active mode.	100% /75% / 50% / 25% load & 115Vac/60Hz or 230 Vac/50Hz input

PRED. by	H.M.Lu2010-11-23	SHENZHEN FEREX ELECTRICAL CO.,LTD.		
CHKD. by				
APVD. by		Model: FAP030-120S250E2	Rev.:1.0	Page3 Of 11

5. Protection characteristics

Input fuse	<input checked="" type="checkbox"/> <u>T2A</u> 250Vac Fuse <input type="checkbox"/> Wire-wound Fuse-resistor
Short-Circuit protection	The adapter must withstand a continuous short circuit on the output without damage and Auto-recovery when short-circuit moved.
Over-Current protection	In Overload mode, The output must drop to a low voltage.
Over-Voltage protection	Single component failure must not cause output voltage over <u>20 V</u> , at <u>230</u> Vac input & <u>2.5A</u> output current,

6. Safety & EMC Standard

The adapter designed to meet the following standards:

Safety standards	<input type="checkbox"/> (CHINA) CCC GB4943-2001 <input type="checkbox"/> (CHINA) CCC GB8898-2001 <input type="checkbox"/> (U.S.) UL 60950-1, 2007 <input type="checkbox"/> (U.S.) UL 60065-1, 2007 <input checked="" type="checkbox"/> (CE) LVD 2006/95/EC Directive IEC 60950-1/EN 60950-1 <input type="checkbox"/> (CE) LVD 2006/95/EC Directive IEC 60065/EN 60065
EMC Standards	<input type="checkbox"/> (CHINA) CCC GB9254-2008 <input type="checkbox"/> (CHINA) CCC GB13837-2003 <input type="checkbox"/> (CHINA) CCC GB17625.1-2003 <input type="checkbox"/> (U.S.) FCC part 15 Class B /ICES-003:CLASS B <input checked="" type="checkbox"/> (CE) EMC 2004/108/EC Directive EN55022/EN55024/EN61000-3-2:2006/EN61000-3-3 <input type="checkbox"/> (CE) EMC 2004/108/EC Directive EN55020/EN55013/EN61000-3-2:2006/EN61000-3-3
Hi-Pot	Primary To Secondary: <u>3000Vac 10mA</u> 1 minute or <u>4242Vdc 10mA</u> 1 minute.
Insulation Resistance	Primary To Secondary: <u>10M ohm</u> Min. at <u>500Vdc</u> .
Leakage Current	0.25mA Max. at 100-240 Vac input / 50-60Hz

7. Reliability & Quality control

Item	Requirement
MTBF	<u>>30000</u> Hours at 25°C (Standard: MIL-HDBK-217F), <u>230</u> Vac input & <u>80%</u> Normal output current.
Burn-In	The power supply shall withstand a minimum of <u>2</u> hours Burn-In test at <u>230</u> Vac input & Normal output current with 35-40 °C room temperatures. After test, product shall operate normally.

PRED. by	H.M.Lu2010-11-23		SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by				
APVD. by		Model: FAP030-120S250E2	Rev.:1.0	Page4 Of 11

8. Environmental requirement

Item	Requirement
Operating Environmental	Temperature: 0°C - 40 °C Relative Humidity: 20%-85%,noncondensing Altitude: Sea level to 2,000 M.
Storage (Non-operating) Environmental	Temperature: -20°C - 60°C Relative Humidity: 5%-95%,noncondensing Altitude: Sea level to 2,000 M.
Cooling	Natural convection cooling
Vibration and Shock	(Non-operating, with packing) Reference to IEC 68-2-6 Frequency: 5-500 Hz Sweep:2hour,each axis (X, Y, Z) Acceleration: 0.6G (5~50 Hz, peak - peak), 1.5G (50~500 Hz, peak - peak) Displacement: 0.4 mm (5~50 Hz)

9. Other requirements

Item	Requirement
Hazardous substances	The components and materials shall be in compliance with <input checked="" type="checkbox"/> EU Directive 2002/95/EC "ROHS" <input checked="" type="checkbox"/> EU Directive 2002/96/ec "WEEE"

10. Mechanical characteristics:

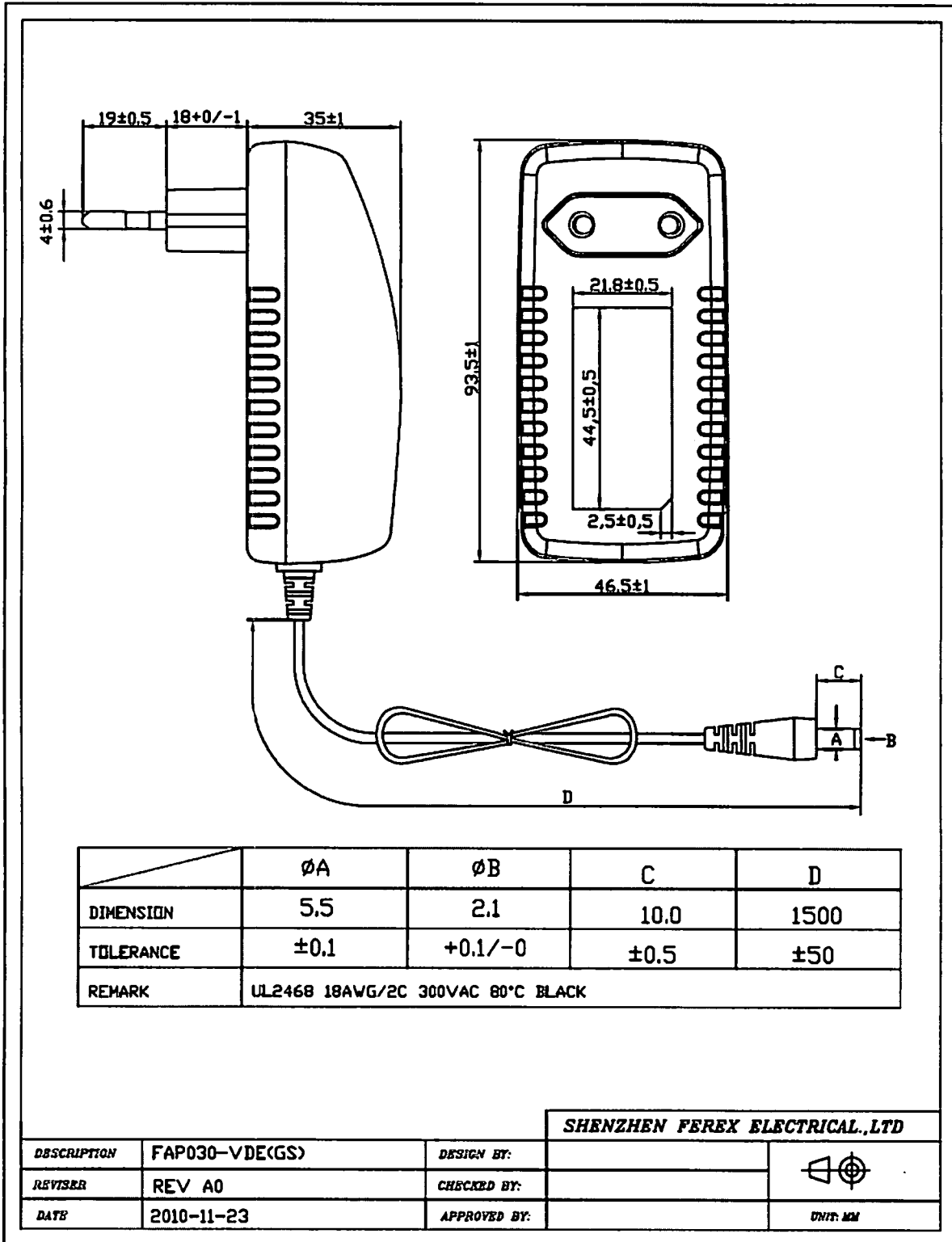
Item	Requirement
Drop test	Dropped freely from 1 m(for wall mount product) height onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20 mm thick, all supported on concrete floor once from 3 different surfaces. After testing, the product should not be damaged.
Physical dimensions	The detail dimension of product see APPENDIX A.
Input plug type	<input type="checkbox"/> Wall-mount type, CCC-pin, 2 Conductors, <Live, Neutral> <input checked="" type="checkbox"/> Wall-mount type, EU-pin, 2 Conductors, <Live, Neutral> <input type="checkbox"/> Wall-mount type, US-pin, 2 Conductors, <Line, Neutral>
Output cord	Wire: <u>UL2468 18AWG/2C 1500mm Black</u> Plug: (OD) <u>5.5mm</u> *(ID) <u>2.1mm</u> *(length) <u>10.0 mm</u> Center (+) <u>180°音叉</u>
Nameplate	The detail information of Nameplate see APPENDIX B.
Packing	The detail information of packing see APPENDIX C.

11. Certificate:

Type of Certificate	<input type="checkbox"/> CCC <input checked="" type="checkbox"/> CE <input type="checkbox"/> GS <input type="checkbox"/> FCC <input type="checkbox"/> UL The detail Certificate of product see APPENDIX D.
---------------------	---

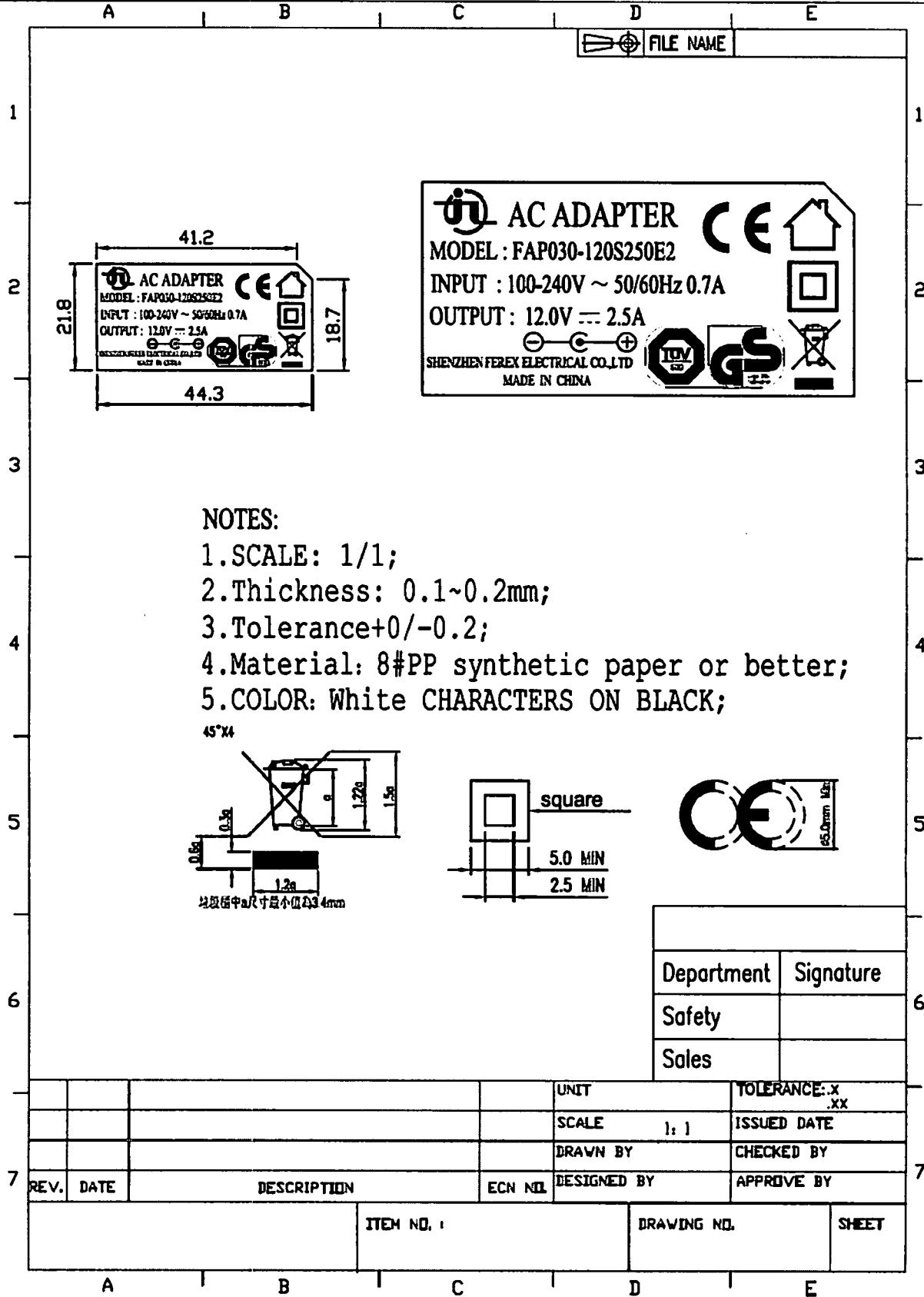
PRED. by	H.M.Lu2010-11-23	 福瑞祥 SHENZHEN FEREX ELECTRICAL CO.,LTD.		
CHKD. by				
APVD. by		Model: FAP030-120S250E2	Rev.:1.0	Page5 Of 11

APPENDIX A: Physical dimensions

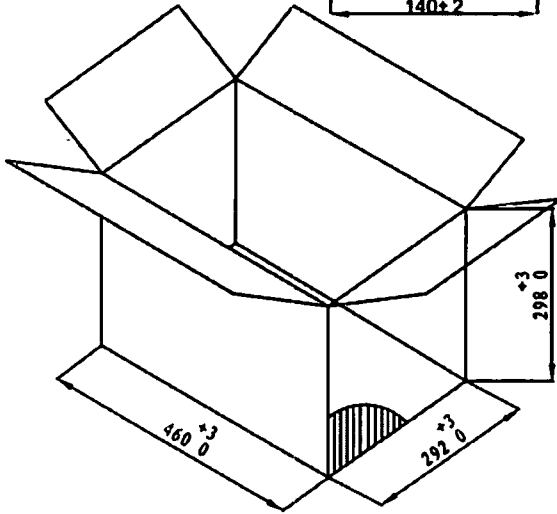
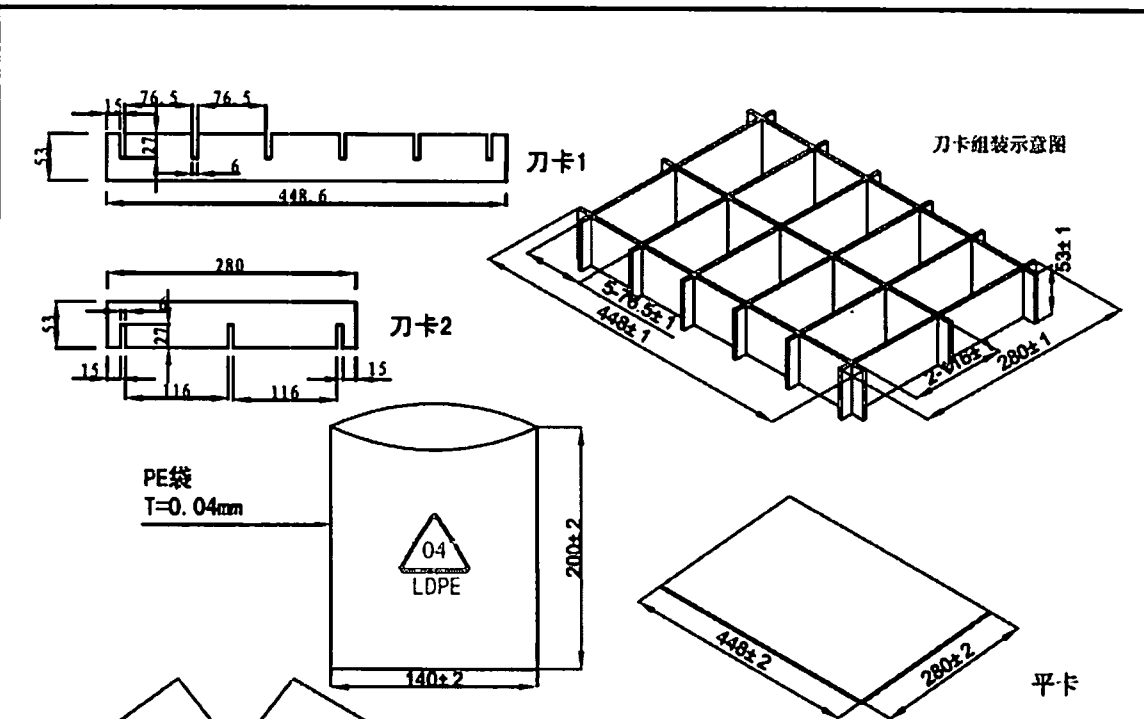


PRED. by	H.M.Lu2010-11-23	福瑞祥 FEREX	SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by				
APVD. by		Model: FAP030-120S250E2	Rev.:1.0	Page6 Of 11

APPENDIX B: Nameplate



APPENDIX C: Packing



- NOTE:**
1. 纸箱材质为A-A, 每箱5层, 每层10台, 共计50台, 标示尺寸(460MMX292MMX298MM)为外尺寸;
 2. 平卡材质为B3B, 数量: 6片;
 3. 刀卡1: 材质为B-B, 数量: 15片;
 4. 刀卡2: 材质为B-B, 数量: 30片;
 5. 注意波纹方向, 勿沿纹路纵向切割;
 6. 接口钉合;
 7. 进料前需先送样承认OK方可;
 8. 使用材料要符合环保要求, 禁止使用有害物质;
 9. 尺寸以标注为准, 切勿实际测量。

<p>福瑞祥 开关电源·适配器 SMPS & ADAPTER</p> <p>深圳市宝安区福永街道... SHENZHEN FEREX ELECTRICAL CO., LTD. 460 292</p>	<p>空箱回收</p>	<p>福瑞祥 开关电源·适配器 SMPS & ADAPTER</p> <p>深圳市宝安区福永街道... SHENZHEN FEREX ELECTRICAL CO., LTD. 460 292</p>	<p>空箱回收</p>
	型号(MODEL): _____ 数量(QTY): _____ PCS 规格(SIZE): 460*292*298 MM		型号(MODEL): _____ 数量(QTY): _____ PCS 规格(SIZE): 460*292*298 MM

SHENZHEN FEREX ELECTRICAL.,LTD		<p>UNIT: mm</p>
DESCRIPTION	DESIGN BY:	
REVISER	CHECKED BY:	
DATE	APPROVED BY:	

PRED. by	H.M.Lu2010-11-23	<p>福瑞祥 FEREX</p>	SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by			Model: FAP030-120S250E2	Rev.:1.0
APVD. by				

APPENDIX D: Certificate

ZERTIFIKAT ♦ CERTIFICATE ♦ CERTIFICADO ♦ CERTIFICAT ♦ CERTIFIKAT ♦ CERTIFICADO ♦ CERTIFICAT ♦ CERTIFIKAT



Product Service

CERTIFICATE

No. Z1A 09 08 70531 004

Holder of Certificate: Shenzhen Ferex Electrical Co., Ltd.

Block 1, The 3rd Industrial Park
Lisongtang Village, Gongming Town
Guangming New District
518106 Shenzhen, Guangdong
PEOPLE'S REPUBLIC OF CHINA

Certification Mark:

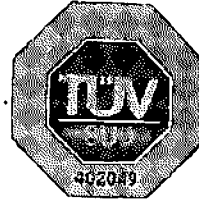


Product: Adaptors
(AC Adapter)

The product meets the safety and health requirements of the German Equipment and Product Safety Act section 7 subsection 1 sentence 2 GPSG. The certification marks shown above can be affixed on the product. It is not permitted to alter the certification marks in any way. In addition the certificate holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is canceled earlier. See also notes overleaf.

Test report no.: 5821C914401

Valid until: 2011-08-14



Date, 2009-08-14

Page 1 of 3

TUV SUD Product Service GmbH - Zertifizierstelle - Riderstrasse 65 - 80339 München - Germany

TUV

PRED. by H.M.Lu2010-11-23

CHKD. by

APVD. by



SHENZHEN FEREX ELECTRICAL CO.,LTD.

Model: FAP030-120S250E2

Rev.:1.0

Page9 Of 11

APPENDIX D: Certificate

ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ ЗЕРТИФИКАТ ◆



Product Service

CERTIFICATE

No. Z1A 09 08 70531 004

Model(s): FAP030-XXSYYYZ2
 (XXX=090-250, stands for output voltage from 9.0V to 25.0V; YYY=050-300, stands for output current from 0.5 to 3.0A. Z=E, stands for EU plug. See page 3 for details of model number.)

Parameters:

Rated Input :	100-240VAC, 50/60Hz 0.7A
Rated DC Output :	See page 3 for details
Construction :	Direct Plug-in
Protection Class :	II
Degree of Protection against Ingress of Dust and Liquid :	IP20
Remark :	The maximum operating temperature is 40°C

Tested according to: EN 60950-1:2006
 PPP 76601 2008 incl. ZEK 01 2-08

Factory(ies): 70531

PRED. by	H.M.Lu2010-11-23	福瑞祥 F E R E X	SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by				
APVD. by		Model: FAP030-120S250E2	Rev.:1.0	Page10 Of 11

APPENDIX D: Certificate



Certificate No.: E/EC3090090605119

For the following equipment:

Product Description: AC adapter
 Model No: FAP030-XXSYYYE2
 Rating(s): 100-240V~, 50/60Hz, 0.7A
 Trademark: FEREX, JIUZHOU
 Applicant: Shenzhen Ferex Electrical Co.,Ltd.
 Block 1, The 3rd Industrial Park, Lisonglang Village, Gongming Town, Guangming New District District, Shenzhen, Guangdong, China
 Manufacturer: Shenzhen Ferex Electrical Co.,Ltd.
 Block 1, The 3rd Industrial Park, Lisonglang Village, Gongming Town, Guangming New District District, Shenzhen, Guangdong, China

is herewith confirmed to comply with the requirements of 2006/95/EC—Low Voltage Directive (LVD), 2004/108/EC—Electromagnetic Compatibility (EMC) Directive and 93/68/EEC—CE Marking Directive.

Test standards: IEC60950-1:2005 (2nd Edition) and/or EN60950-1:2006
 EN55022:2006
 EN55024:1998+A1:2001+A2:2003
 EN61000-3-2:2006
 EN61000-3-3:1995+A1:2001+A2:2005

Test report No.: Z0904CE0907-0103-S, Z0904CE0907-0103L

Date of issue: 2009-06-05

Chen Lihui
 Director



Laboratory

China CEPREI Laboratory
 Add.No.110 Dongguanzhuang Road,
 Tianhe District, 510610 Guangzhou, China
 Http://www.ceprei.biz

P.O. 1501-07 QZ 510610 P.R.C

PRED. by	H.M.Lu2010-11-23		SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by				
APVD. by		Model: FAP030-120S250E2	Rev.:1.0	Page11 Of 11